



Joint Air and Missile Defense Community of Interest (JAMD COI) Net-Centric Migration Activities

Joint Air and Missile Defense Community of Interest (JAMD COI)

“The Hub of Net-Centric Migration Activities for Joint IAMD”

Co-Directors



Ole Knudson
BG, USA
Program Executive Officer,
Missiles and Space (PEO MS)

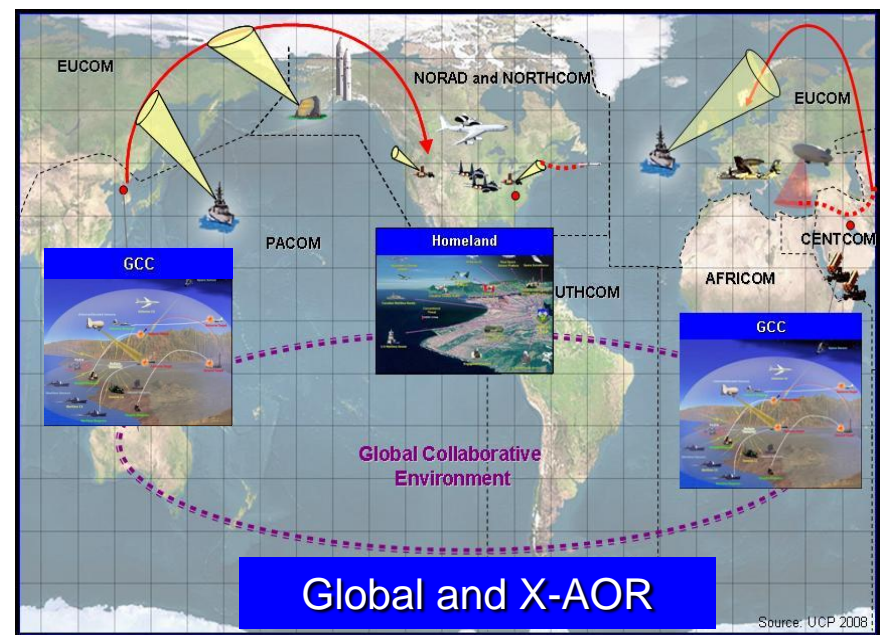
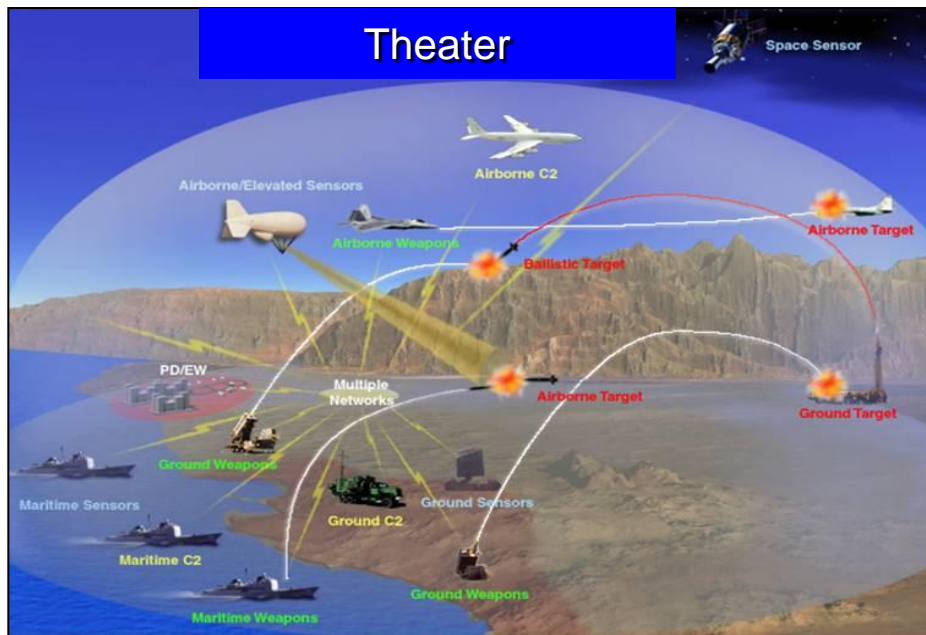


Kerry Kelley
Senior Executive Service (SES)
J6
USSTRATCOM

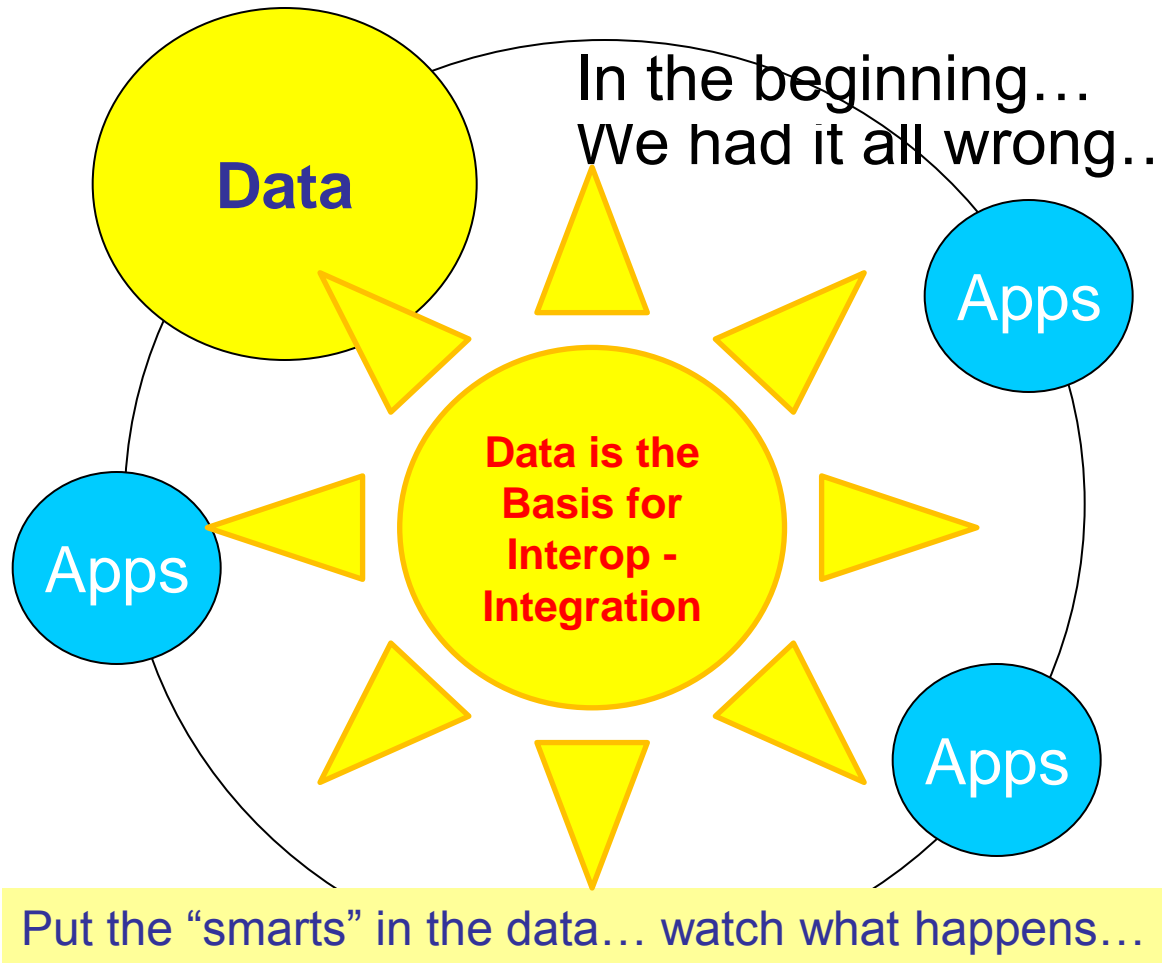
Distribution Statement A – Cleared for Public Release

Joint Air and Missile Defense Community of Interest Mission

- Support migration of the Joint and Multinational IAMD communities toward Net-Centric Operations and Warfare through *the development of a single common data standard/ vocabulary for the JIAMD community as well as other JIAMD Net-Centric Products*
- Establish a strategy for programs within the JAMD COI portfolio to *actively address the Net-Ready KPP* and to *support the PMs with Net-Centric expertise and artifacts/tools*
- Establish a framework that *supports PMs in leveraging DoD and industry technologies* to bring services-oriented architecture (SOA) capabilities to the Joint IAMD Warfighter (i.e., web technologies)

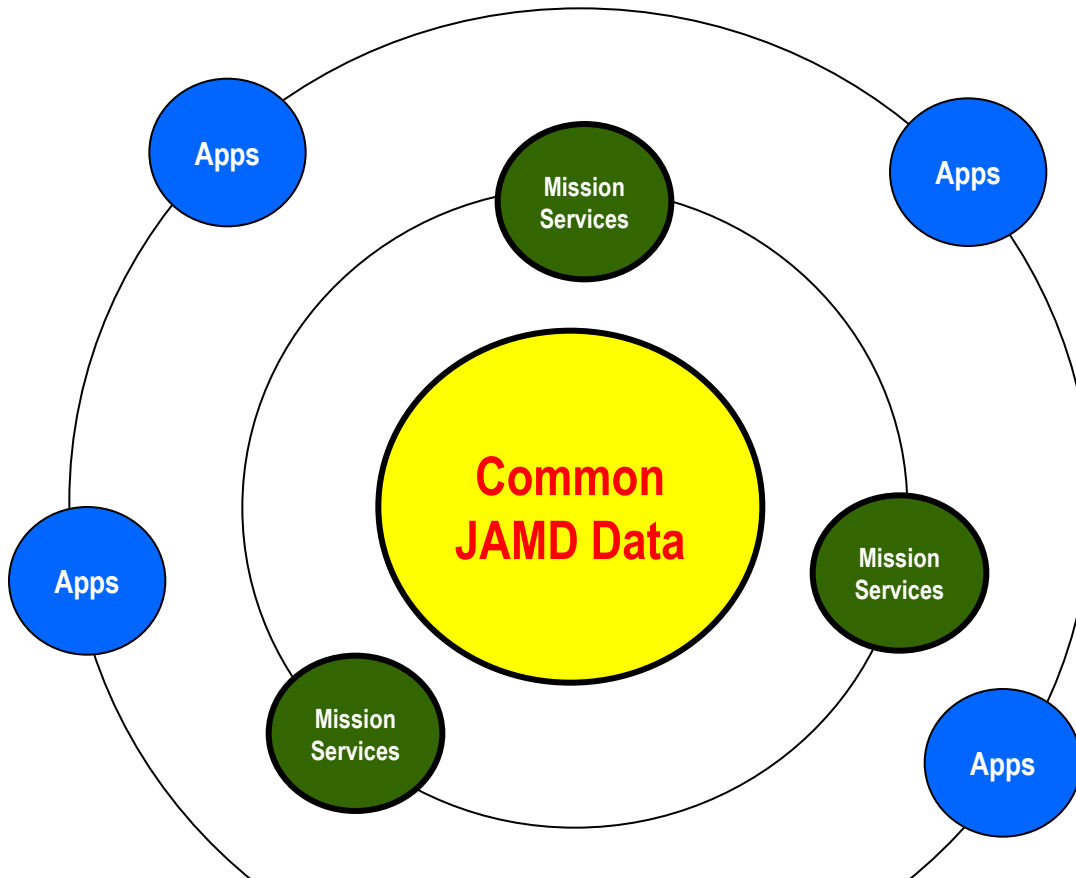


“Copernican Shift” in Interoperability - Integration



***“It’s the data, stupid! Break down the vertical cylinders of excellence.”
-Gen. Cartwright, JIAMD Summit-07***

The Role of Common Data / Mission Services



The Service-Oriented Architecture (SOA)
component of the Net-Centric Data Strategy
Requires...

...Building Applications that leverage common
Mission Services built on common data!

Develop Mission Services Based on Common Data...

***Break Down the Stove Pipe CPs, Dedicated Radios and
Networks... Mission Services Available to All Authorized Users.***



Key Components of the DOD Net-Centric Data Strategy

Department of Defense
Chief Information Officer

Make Data Visible

Is an information resource **discoverable** by **end-users**?

Make Data Accessible

Is it connected to the network(s), and are tools readily available to use and allow assured access to it?

Make Data Understandable

Can it be used intelligibly? Are the **semantics well documented**?

Make Data Governable

Are **data processes governed with sustained leadership**?

Enable Data to Be Trusted

Is the **authority (pedigree, security level, and access control level)** known and available?

Make Data Interoperable

Can it be easily combined or compared with other information and/or mediated?

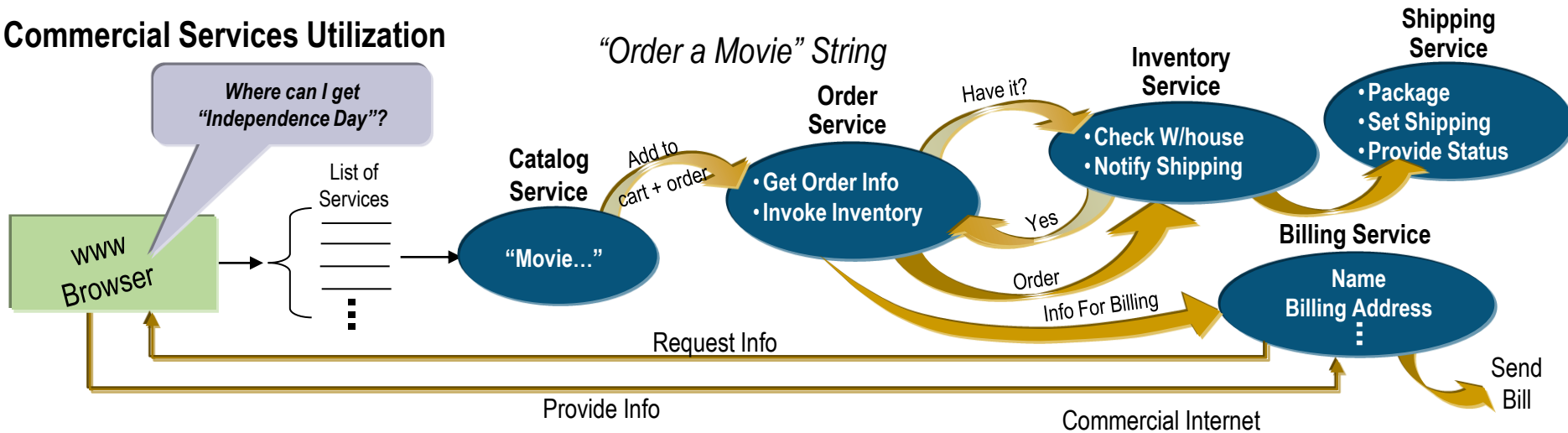
Be Responsive to User Needs

Are users involved in COIs? Are robust, direct user feedback mechanisms in place to guide development?

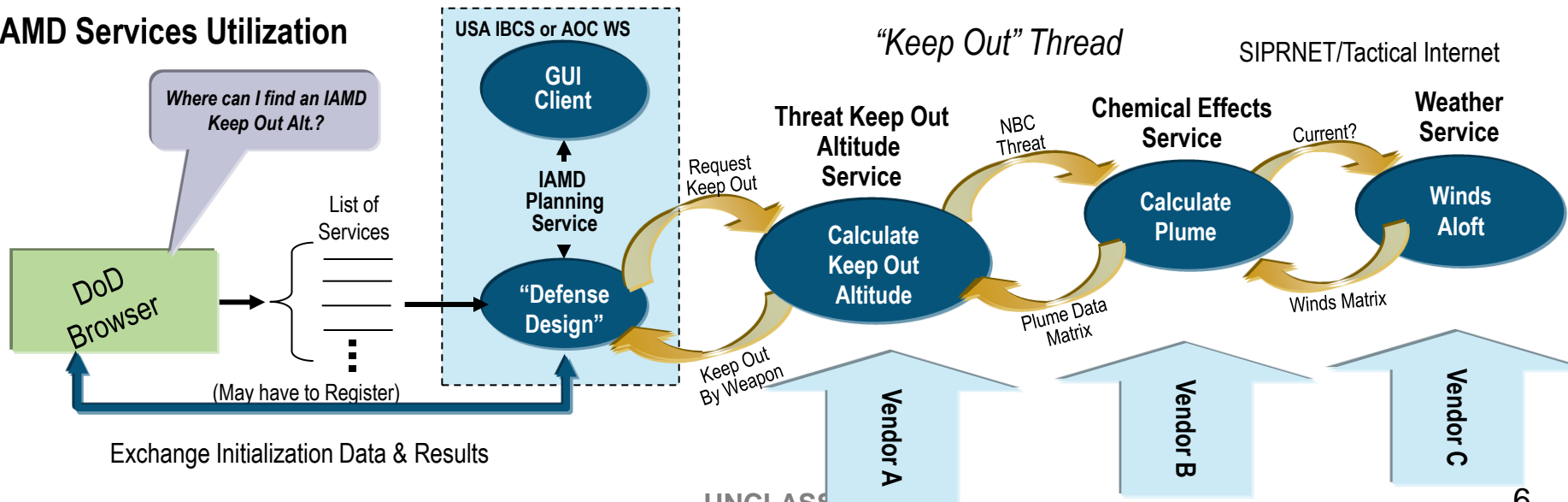


JIAMD Mission Services (Use Commercial Approach)

Commercial Services Utilization

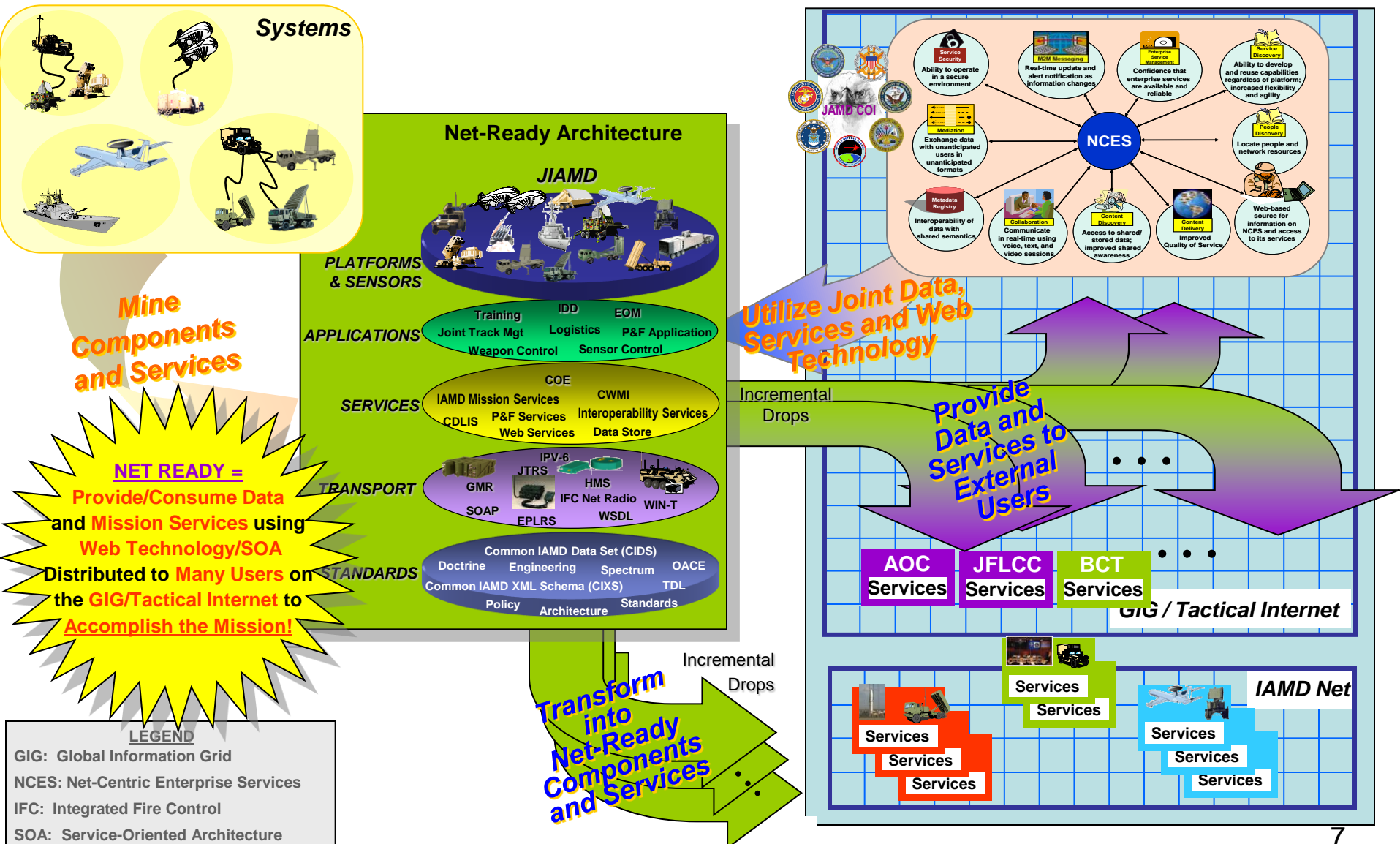


JIAMD Services Utilization



-Notional Example-

(Note: This chart may be slow to animate)

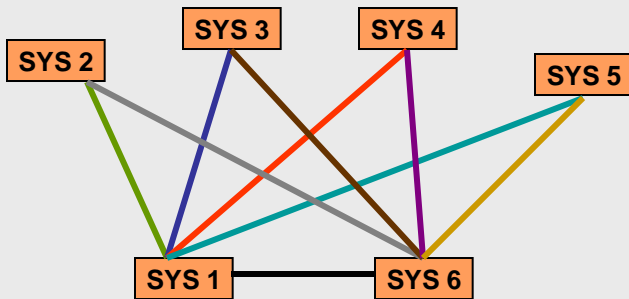


Evolution of IAMD Data Exchange

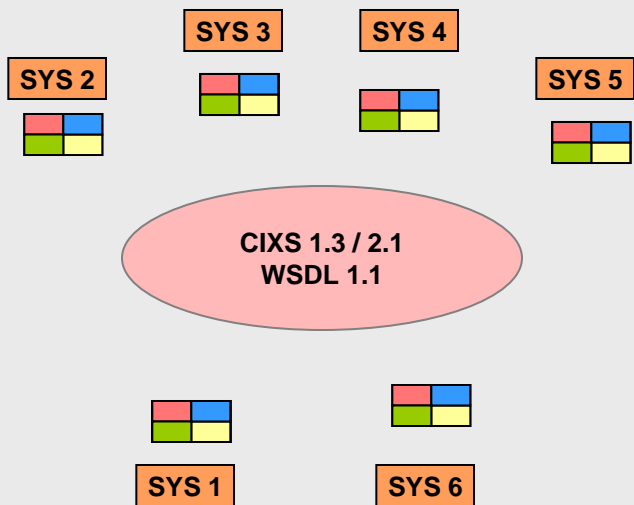
From Legacy Stovepipes to a Service Oriented Architecture

(NOTIONAL)

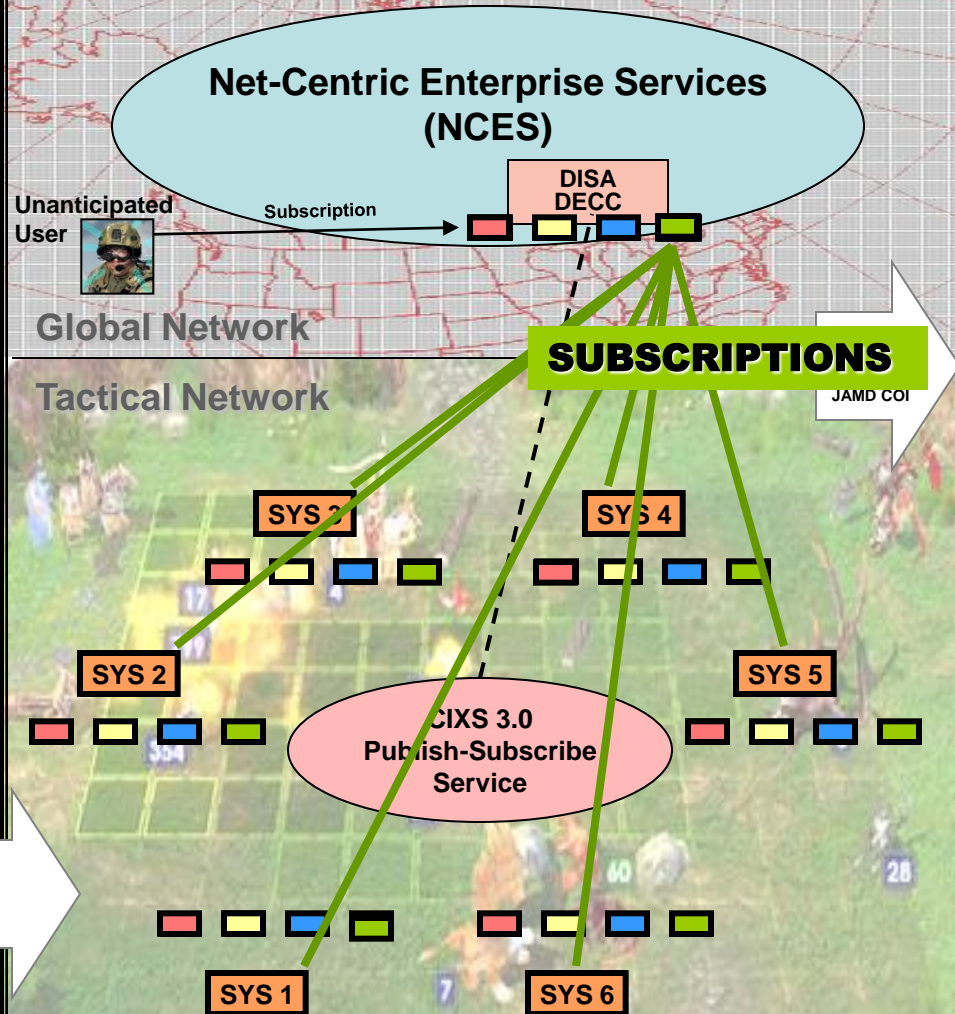
Pre-CIXS Unique Stovepipe Interfaces



CIXS 1.3 & 2.1 Common Stovepipe XML Interfaces

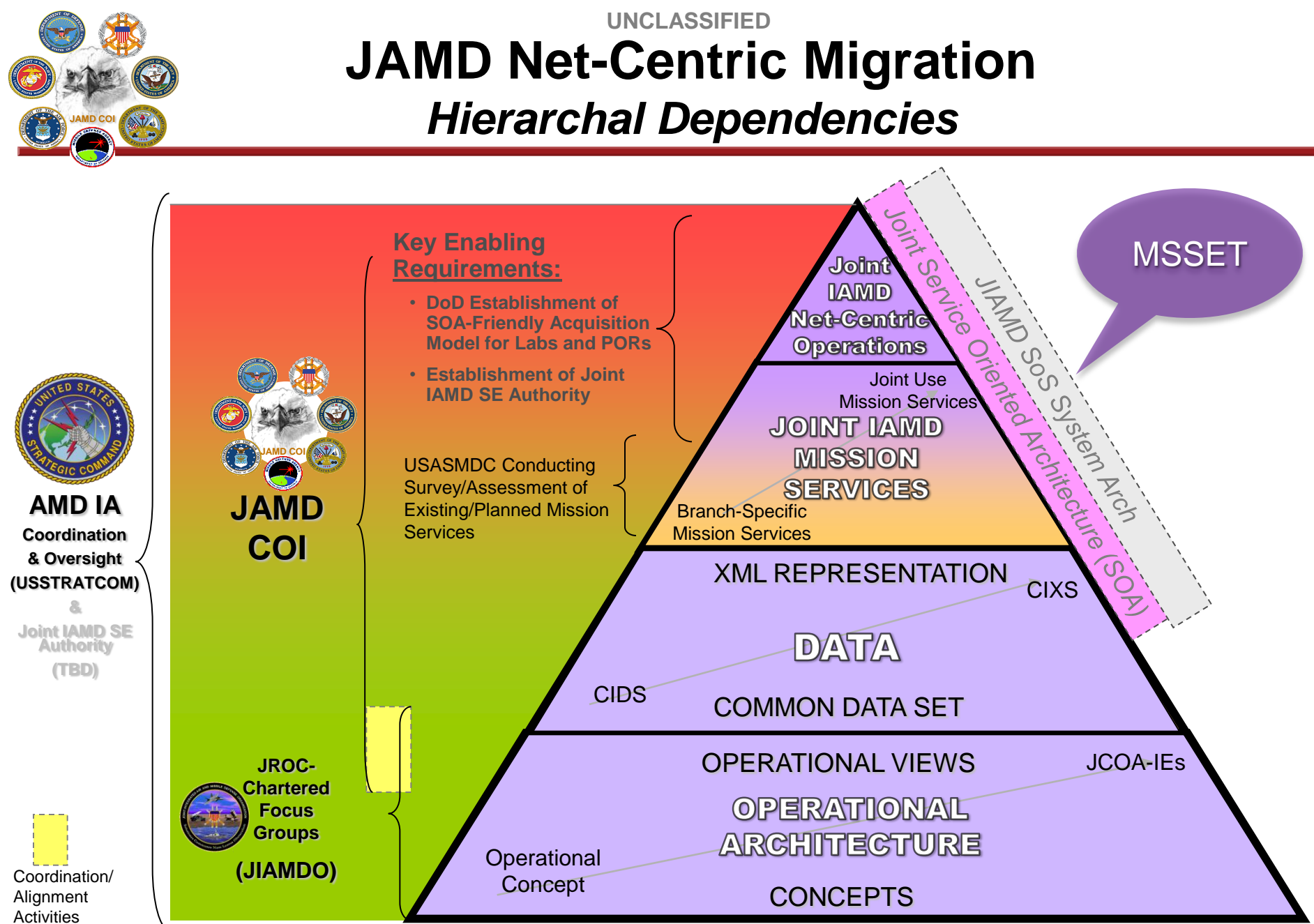


CIXS 3.0 Net-Centric Data Exchange



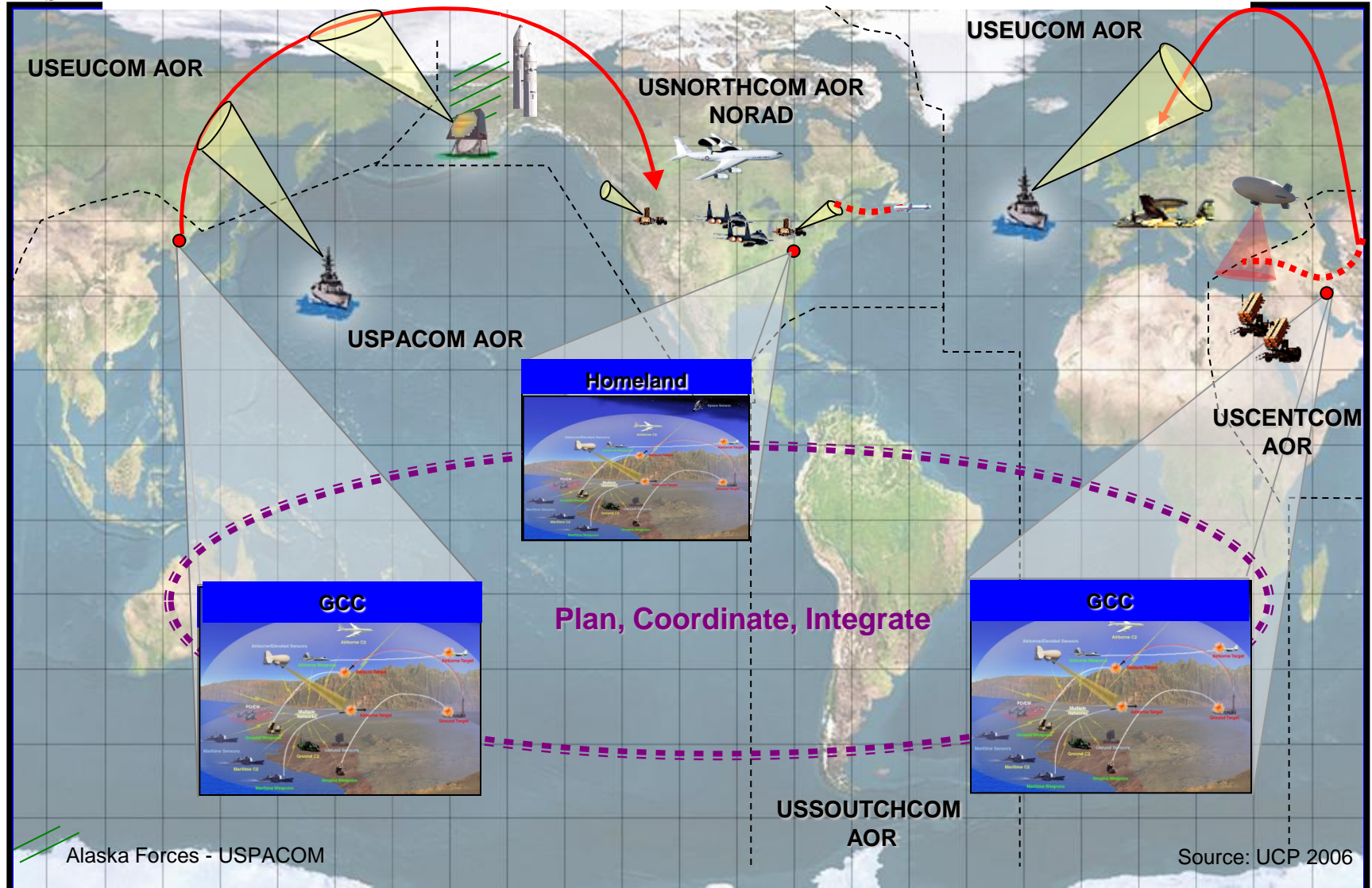
JAMD Net-Centric Migration

Hierarchal Dependencies



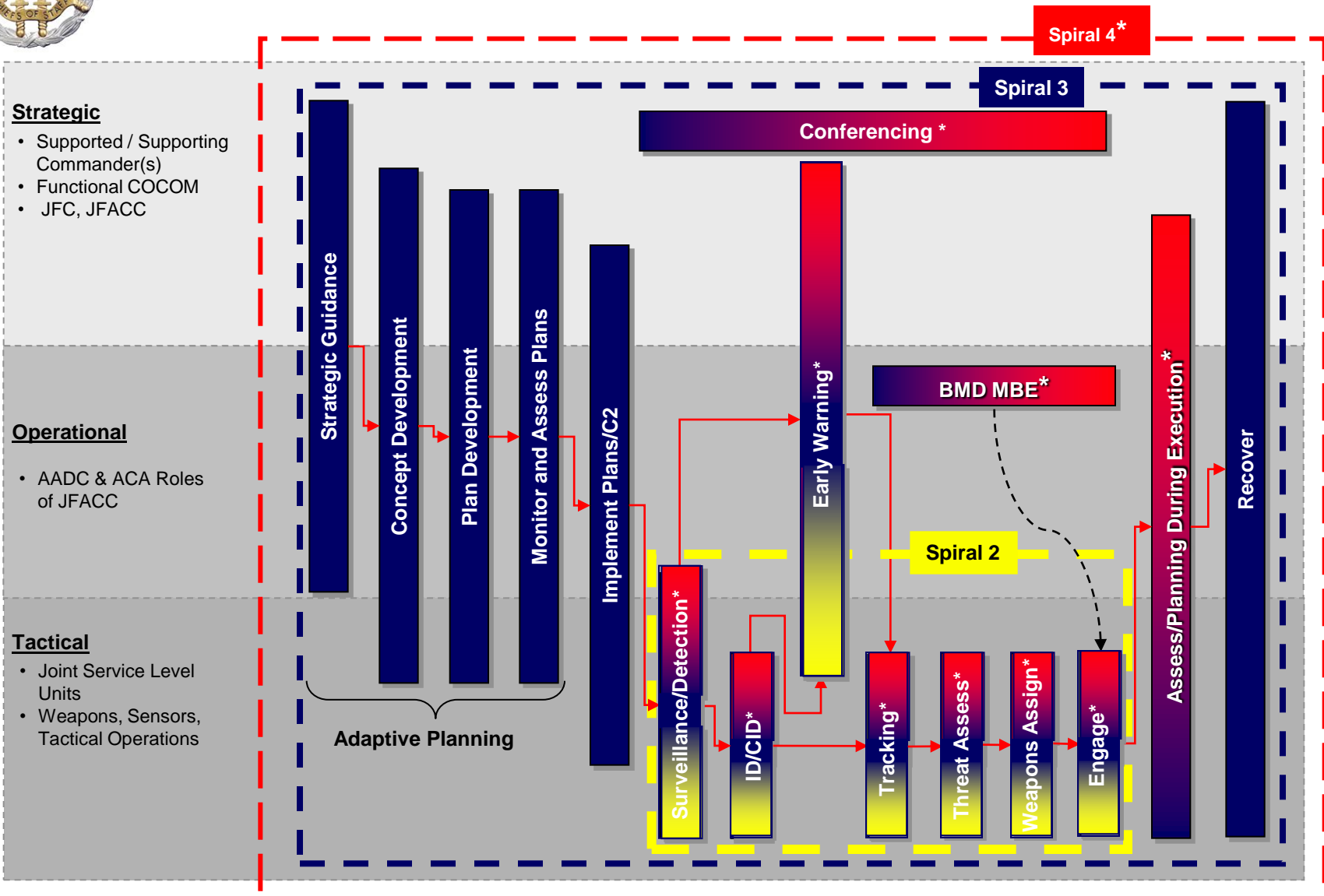


2015 Integrated Air and Missile Defense



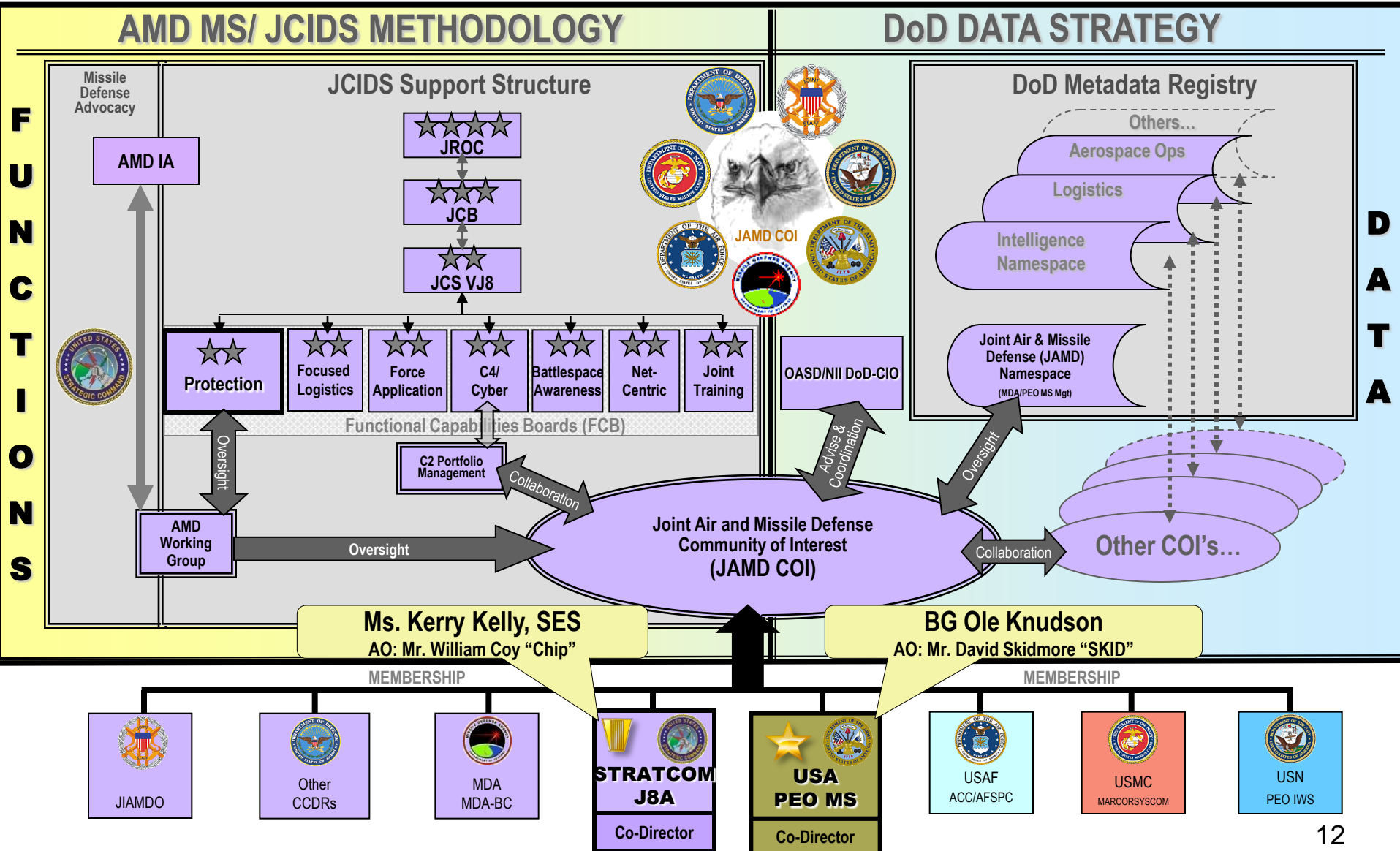


JIAMD Operational Architecture Scope (U)

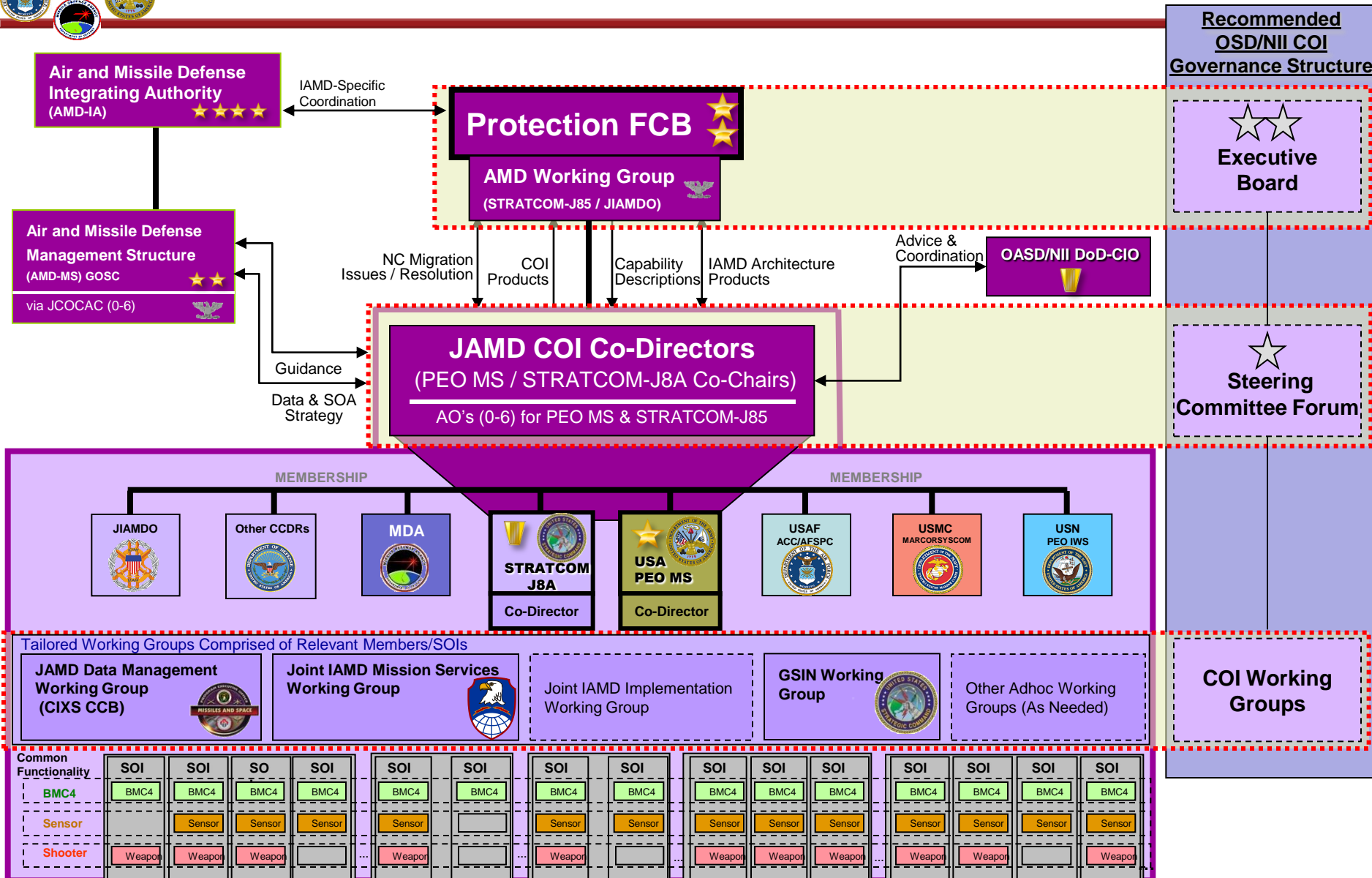


Joint Air and Missile Defense Community of Interest

JAMD COI Collaboration



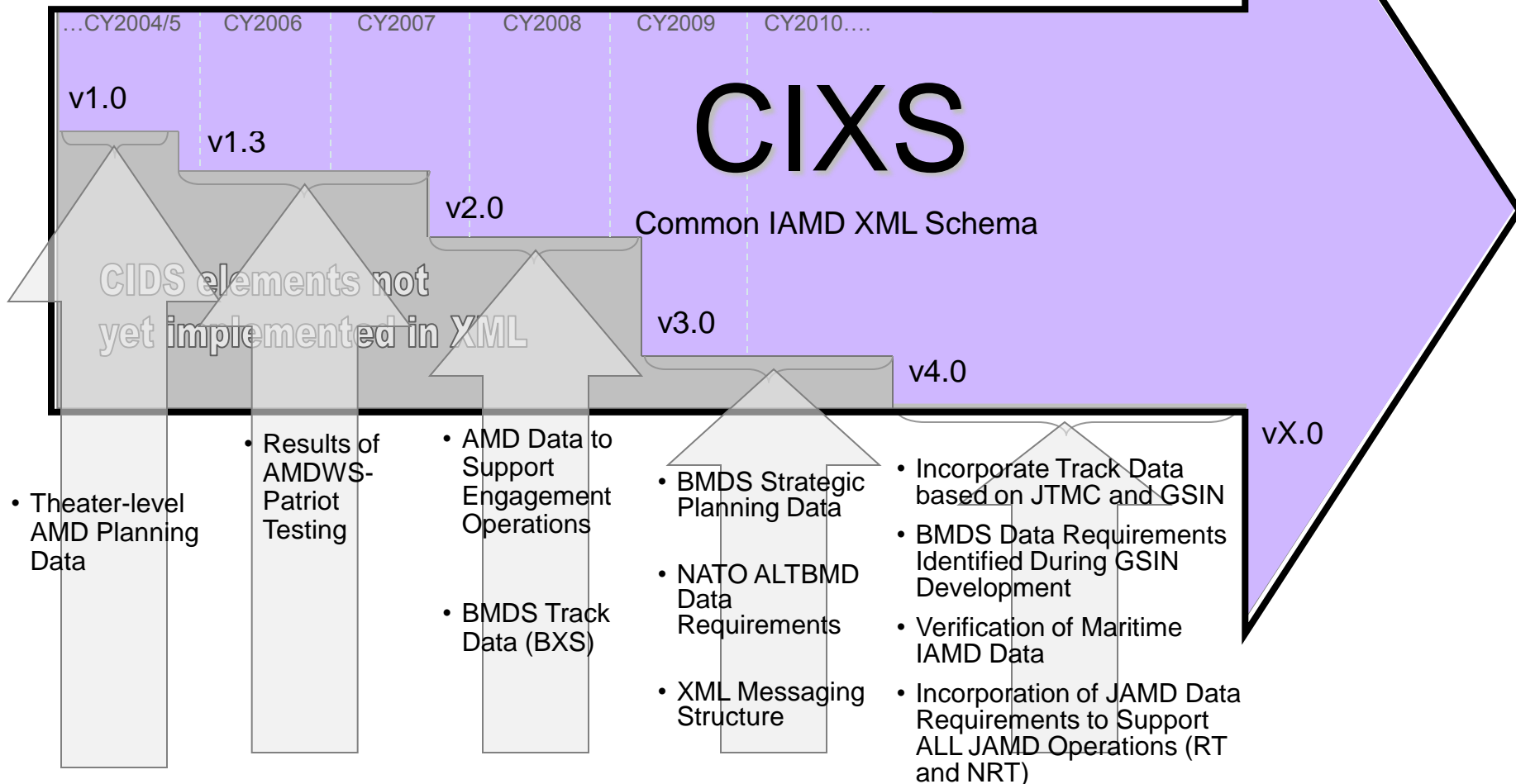
JAMD COI Governance/Advocacy



SOI = Systems of Interest
Derived from the Fundamental Systems List (FSL)

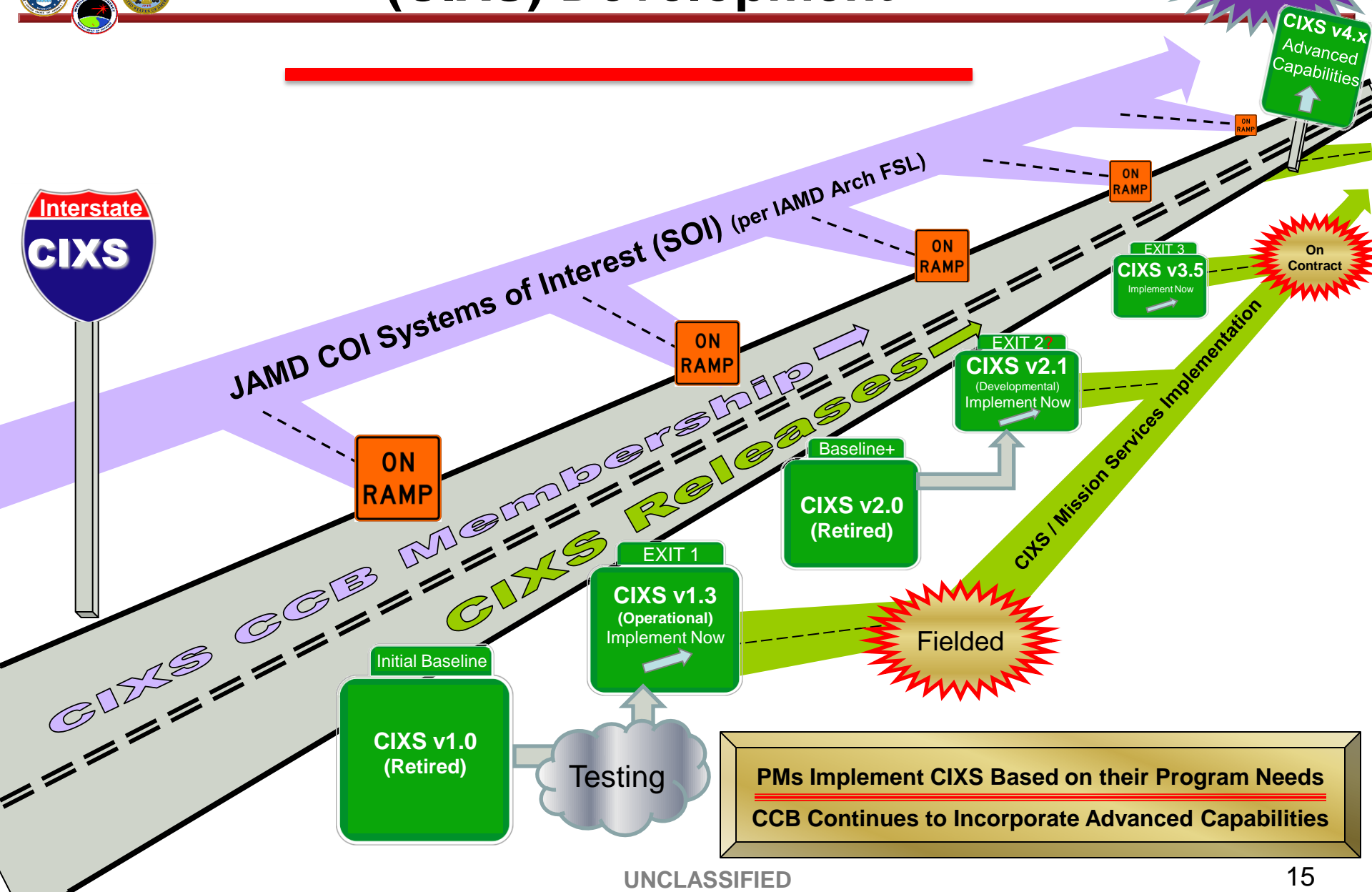
CIXS

Net-Centric Standard for the JAMD Community

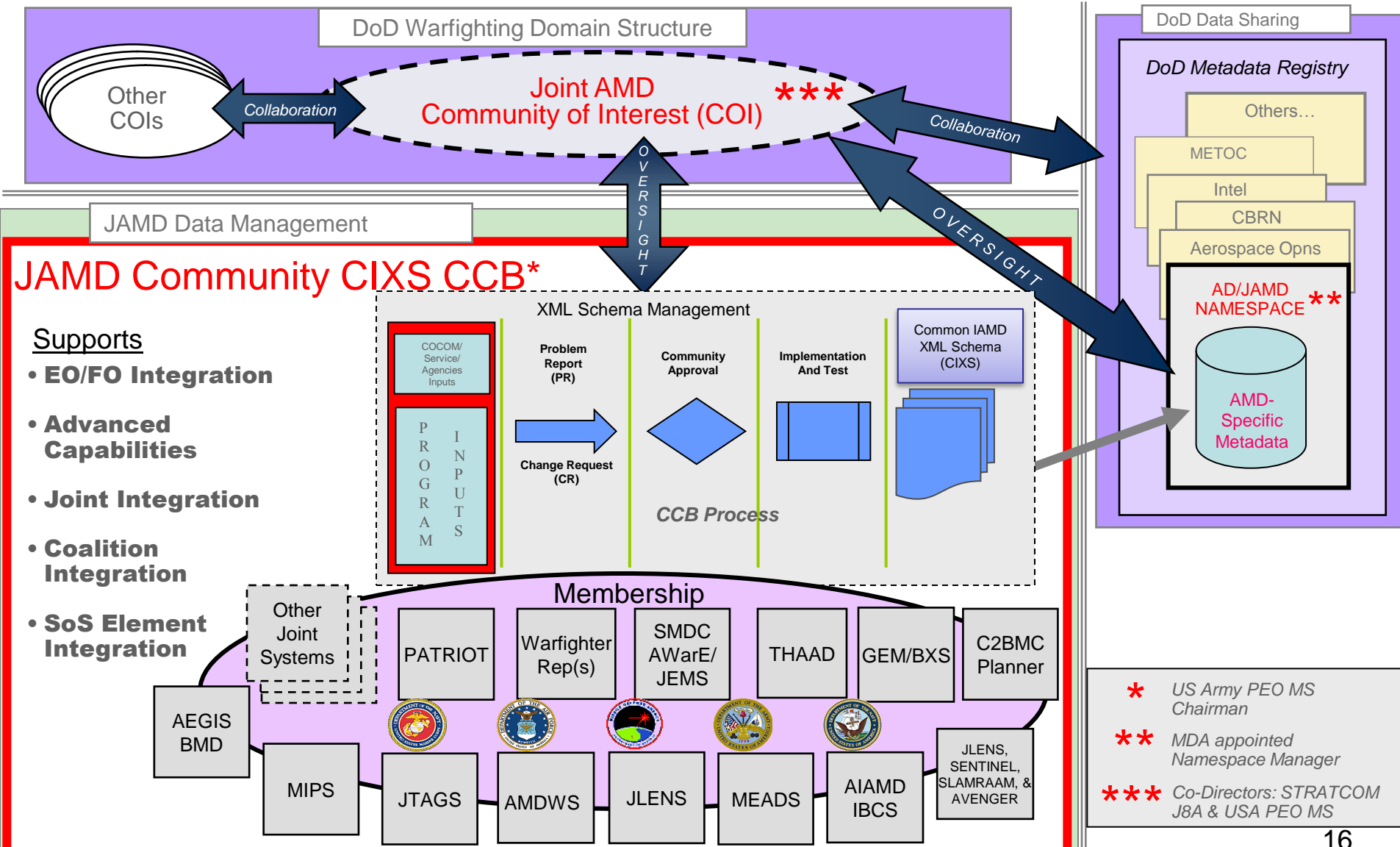


Common IAMD XML Schema (CIXS) Development

Net-Centric Operations and Warfare



JAMD Data Management Process



Guiding Principles

- Accept DoD *Net-Centric Data Strategy as directive*
- *Data Development is “Capabilities Based” IAW JCIDS and determined by each community’s warfighter functional requirements*
- **Use the most effective & efficient means of transferring technical data (*machine-to-machine*)**
- **Present the user anything he/she wants via the warfighter display (GUI)**
- **Capture objective data definitions and metadata using XML** to support:
 - Near-term implementation
 - Future implementations of advanced capabilities
 - Data exchange in support of Service Oriented Architectures and Militarized Web Technology
- Implement objective data in **XML as technology allows** (e.g. OTA bandwidth limitation)
- **A common data set that supports all activities of the JAMD Warfighter.**
 - **Enables planning/weapon systems initialization integration**
 - **Seamless near real time replanning with engagement operations**
- **Use legacy TDL/MTF elements if they support operational data requirements** to achieve NCOW objectives
- **Eliminate costly redundant and inconsistent legacy data elements**
- Intent of Joint Capabilities Integration and Development (JCIDS) can only be met by **collaborative Joint Material Development** (e.g. Joint Track Manager-JTM)

- GUI – Graphic User Interface
- JCIDS – Joint Capabilities Integration & Development System
- MTF – Message Text Format
- OTA – Over the Air
- TDL – Tactical Data Link

Guiding Principles Evolved From Joint Data Development Experience

JAMD COI Product Set

Examples

- **CIDS/CIXS:** Common Data / XML Schema for all JIAMD activities
- **JAMD Vocabulary:** List of operational terms and definitions for entities and concepts within the JAMD domain; coordinated among the Services/MDA
- **JAMD Discovery Taxonomy:** A hierarchal categorization of JAMD data to enable search and discovery based on functional use; Synchronized with the DoD Core Taxonomy
- **JAMD Net-Centric Assessment Toolkit:** Tool to support PM self-assessment of their program's net-centric profile; Enables PMs to access the impact of net-centric investments on the program's mission effectiveness; Results support Enterprise level assessments
- **JAMD Web Service Standards and Implementation Guidance:** Provides recommendations regarding the use of web services from the W3C web service stack as well as implementation guidance based on actual implementation experience and pilots
- **JAMD Mission Services Survey:** Listing of known JIAMD Mission Services and associated analysis as related to the JIAMD Operational Architecture.
- **JAMD Pedigree Logical Data Model:** Provides recommended pedigree data/attributes for use in JAMD data exchange. Includes pedigree business rules, use cases, and conceptual data model. •



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U.S. Army Space and Missile Defense Command/
Army Forces Strategic Command



JIAMD Web Service Survey & Assessment

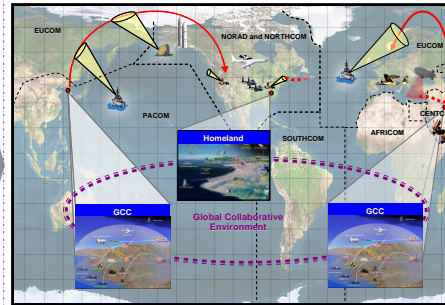
2009-2010 Assessment

JIAMD 2009 WS Survey

- Web Services Responses Include:
 - USAF 22
 - US Army 22
 - US Navy 7
 - ALT BMD (NATO) 6
 - MDA 6
 - STRATCOM 2
 - IBS 1
 - DISA 1
- Total JIAMD Web Svcs. 67

Map
to

IAMD ARCHITECTURE



JIAMD Activities: 544

Also
Done

IAMD Activities Mapped to COCOM Capability Gaps

**GAP
TABLE**
IAMD
Activities

IAMD Capability
Gaps

Next Step: COMPARE

ANSWERS for IAMD Architecture

Table 1 - What IAMD activities are
satisfied by JIAMD Web Services?

Table 2 - What JIAMD Web
Services support the same IAMD
activities?

PLANNING:	177
ENGAGE:	186
ASSESS:	18
Activities Mapped:	197*

*Many activities mapped to more
than one category

Results

IAMD Activities Covered by JIAMD Web Services

TABLE 1 IAMD Activities

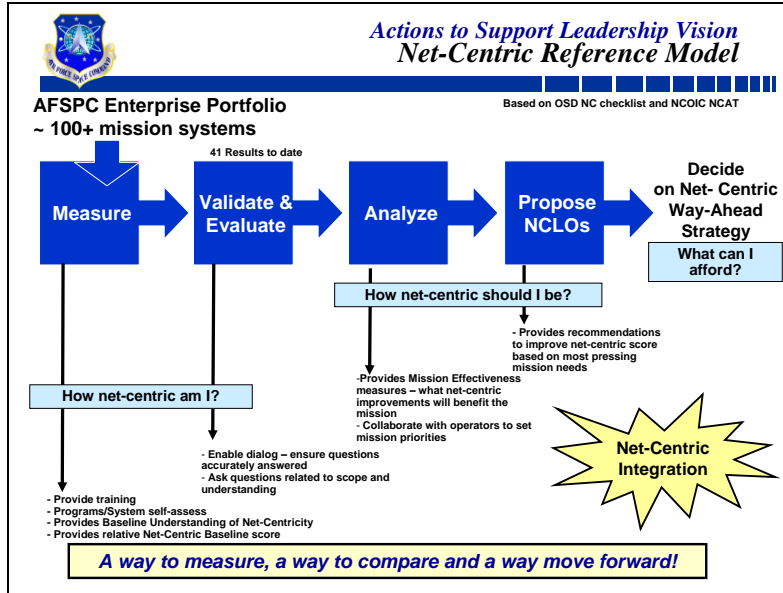
TABLE 2 - Reverse Mapping

What Web
Services Will
Satisfy JIAMD
Gaps?

"Secure the High Ground"

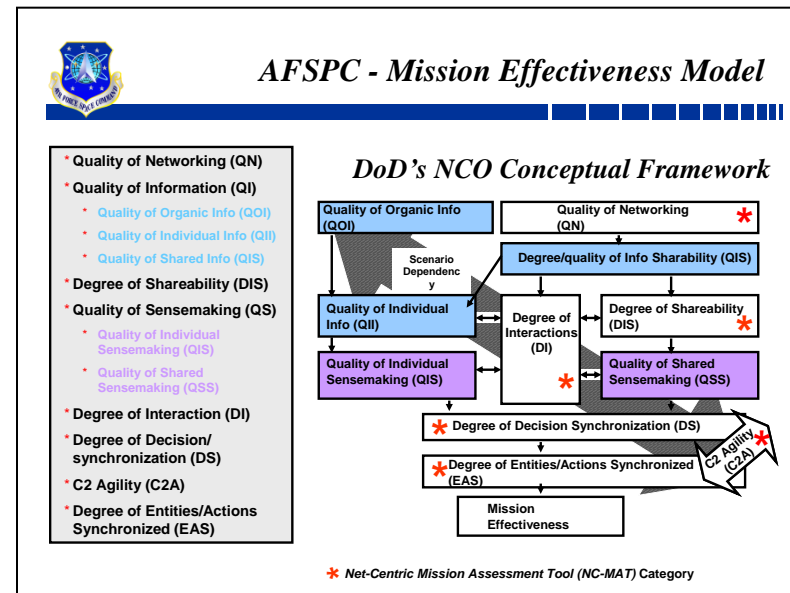
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Net-Centric Assessment Tool



- Leveraging the USAF Space Command (AFSPC) Net-Centric Assessment Tool to support Net-Centric assessment of JAMD programs
- Based on PM self-assessment using the DoD NC Checklist as the baseline
- Provides recommended actions to PM to increase mission effectiveness through Net-Centric improvements
- Currently being updated to reflect current DoD guidance

- Mission Effectiveness Model (MEM) enables PMs to prioritize enhancements to net-centricity
 - What is the projected impact on mission effectiveness of a proposed net-centric enhancement?
 - What options provides the greatest ROI?
- AFSPC POC is Mr. Ed Strecker, (719) 554-5549, Edward.strecker@peterson.af.mil



Joint Air and Missile Defense Community of Interest

Multinational Integration Activities

- **NATO ALTBMD Programme Office**



- Collaboratively developed XML messages to support evolution of CIXS 3.0
- Released CIXS 3.1 to NATO in Mar 2009 in support of ALTBMD schedule; CIXS 3.3 Released Jul 2010
- Participated in Web Service Workshops on 3-4 June and 7-8 Oct 09 to establish common approach for Web Service development.
- CIXS data workshop with NATO 7-9 Sep 2010 to satisfy NIDD IER requirements
- CIXS 3.4 on contract for NATO ACCS

- **NATO C3 Agency (NC3A)**



- Released Common IAMD XML Schema (CIXS) to NC3A Nov 2005
- Collaboratively planned Multinational IAMD Planning Pilot executed at JPOW-X
 - Implemented CIXS in NATO Planning Tool (PlaTo)
 - Demonstrated new defense planning Web Service utilizing CIXS 1.3 – Very Successful
- Conducted pilot during JPOW-2010 using CIXS 3.1 pub/sub web service – Very Successful

- **NATO Joint Capability Group for Ground-Based Air Defense (previously LCG-4)**



- USA PEO MS providing IAMD Net-Centric Integration expertise in support of JCG-GBAD activities
- Germany, Britain, and US SHORAD conducted experiment as part of 2010 Tri-Partite MOU, using CIXS for sensor and weapon data exchange

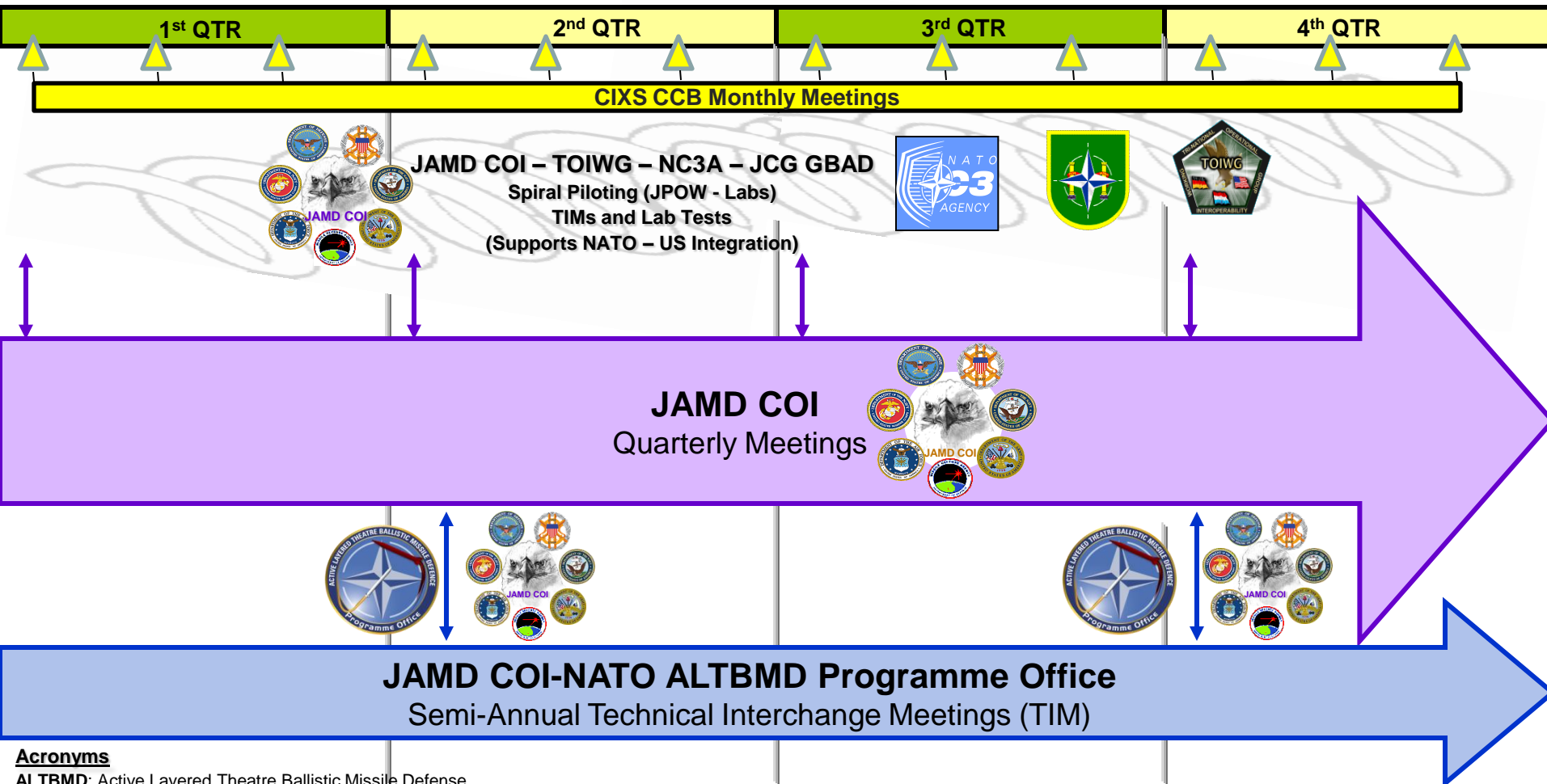
- **Plus...**



Joint Air and Missile Defense Community of Interest



NATO Coordination Schedule

**Acronyms**

ALTBMD: Active Layered Theatre Ballistic Missile Defense
COI: Community of Interest
JAMD: Joint Air and Missile Defense
JPOW: Joint Project Optic Windmill
JCG GBAD: Joint Capability Group – Ground-Based Air Defense
NC3A: NATO Consultation, Command & Control Agency
TOIWG: Tri-national Operational Interoperability Working Group

JAMD COI DKO Workspace

(URL: <https://www.us.army.mil/suite/page/498325>)



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Welcome to Joint Air and Missile Defense (JAMD) COI

Options

Joint and Missile Defense (JAMD) COI Leader's Message

Options



Welcome to the JAMD COI Workspace

On behalf of the Co-Directors of the Joint Air and Missile Defense Community of Interest: Ms. Kerry Kelly, US STRATCOM and BG Ole Knudson, USA PEO Missiles and Space: WELCOME! Our Mission: Joint (Integrated) Air and Missile Defense Customer: Any Warfighter - Anywhere - All the Time!

[» AO for JAMD COI](#)

Joint Air and Missile Defense (JAMD) COI Announcements

Options

2 Feb 2011 18:19 GMT

Last JAMD COI meeting was hosted by the Army Program Executive Office Missiles and Space (PEO MS) on 25-26 January in Huntsville, AL. Presentations from that meeting are available in the document library.

[» JAMD COI Meetings](#)

Next JAMD COI meeting is tentatively scheduled to be hosted by the Joint Forces Command (JFCOM)/Lockheed Martin on 27-28 April in Suffolk, VA.

Current [« Previous](#) | [Next »](#) [Archived](#)

Joint Air and Missile Defense (JAMD) COI Links

Options

Joint Air and Missile Defense (JAMD) Namespace

Link to the Joint Air and Missile Defense (JAMD) Namespace within the DoD Metadata Registry and Clearinghouse (MDR&C). If already signed into the MDR&C, this link will take you directly to the JAMD Namespace. If not already logged into the MDR&C, you will be directed to the Homepage. Once logged in to the MDR&C, choose View-Namespaces, open the DODENT-DoD Enterprise folder, and select "JAMD-Joint Air and Missile Defense." The JAMD Namespace contains the Joint Air and Missile Defense Community of Interest (JAMD COI) Common IAMD XML Schema (CXDS) and supporting WSDL and Common IAMD XML Message Set. Dr. Timothy Kearns (MDA BCE/ MITRE), 719-277-4174 is the JAMD Namespace Manager; Mr. Joe Velasquez, 256.864.7038, (PEO MS/BAE Systems) is the Namespace Administrator. Metadata is posted to the JAMD Namespace as authorized by the CXDS CCB. The CXDS CCB serves as the Data Management Working Group under the Joint oversight of the JAMD COI.

JIAMD Web Services Forum

This forum is the home for the Joint Integrated Air and Missile Defense (JIAMD) community to coordinate operational development of Web Services to support the JIAMD Warfighter. This site identifies current Web Services that exist and those planned to support JIAMD capabilities. The site will also provide a forum for the collaboration of work efforts and other assessment and reference products. The JIAMD Web Services Forum serves as the Joint IAMD Mission Services Working Group for the JAMD COI.

JAMD COI Calendar

Options

Upcoming Events

[Full Month View](#) [Add Event](#)

Event: Joint Air and Missile Defense Community of Interest Meeting (JAMD COI)

Time: 4/27/2011 - 4/28/2011 (All-Day)

Location: Suffolk, VA (JFCOM - Lockheed Martin)

Summary:

Joint Air and Missile Defense (JAMD) COI Knowledge Center

Options

Joint Air and Missile Defense (JAMD) COI Files

Show 10 [20] 50 100

Add File Add Folder Copy Delete Recycle Bin Download Move Send Link Tiles View

<input type="checkbox"/>	Name	Type	Creator	Size	Date/Time GMT	Version
<input type="checkbox"/>	JAMD COI	Folder	gerald.skidmore	829 files	May 1, 2009 5:07 PM	
<input type="checkbox"/>	JIAMD Summit	Folder	gerald.skidmore	114 files	Mar 2, 2009 10:39 PM	



Summary

- JAMD COI is focused on the Development/Coordination of Common IAMD Data and Mission Services for the JAMD community
- JAMD COI is leading our community's migration to JIIM IAMD Net-Centric Operations and Service Oriented Architectures (SOA)
- Working Closely With:
 - DoD
 - CDRs
 - USA/USN/USMC/USAF
 - JPEO IAMD / MSSET
 - Joint staff
 - MDA
 - Other COIs (e.g. AO, C2 SSA)
 - NATO NC3A / JCG-GBAD / ALTBMD Programme Office
- Net-Centric SE Activities support PMs in satisfying NR KPP requirements to realize JIAMD Capabilities
- JAMD COI is working closely with Multinational IAMD partners to facilitate interoperable and interdependent IAMD capabilities
- Working to Align Initiatives in support of:
 - Joint Track Management Capability / Combat ID / Integrated Fire Control / Automated Battle Mgt Aids
 - Air and Missile Defense Integrating Authority / AMD Governance
 - NATO Territorial Missile Defense - European Phased Adaptive Approach

JAMD COI, JAMD Namespace, and CIXS CCB are Key Enablers to Implement the DoD Net-Centric Data Strategy and Satisfy the NR KPP

Points of Contact/Questions



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